

Description

Air Grill

BACKGROUND OF INVENTION

[0001] The present invention generally relates to an air grill, and specifically to an air grill used in the heating/cooling air conditioning systems.

[0002] Traditionally, air grills which are placed on the walls, ceilings and over air filters are well known in the market .

[0003] During maintenance of the heating/cooling air conditioner systems, air grills are changed and cleaned, as necessary. The cleaning process is a cumbersome process and many times, even maintenance staff avoid cleaning and replacing air grills, especially because dirt is not visible to a passerby, but only visible upon inspection by the maintenance staff on the inner side of the grill. Lack of air grill cleaning produces undesirable quality of air, especially in precincts where quality of air is important such as hospitals.

[0004] Accordingly, the need exists for an improved air grill apparatus that can be quickly inspected, cleaned and re-

placed for an air conditioning or heating system within a short duration of time and without the aid of any specialized tools. Of course, the present invention may be used in a multitude of systems where similar quick disconnecting, inspecting, and replacing capabilities are desired. Thus, the present invention should not be interpreted as being limited to application in connection with air grills used in heating/cooling air conditioning systems.

SUMMARY OF INVENTION

[0005] In a preferred embodiment, the present invention provides an improved air grill apparatus. Preferably, the air grill includes a constitutive layer or a laminar element. Further, the constitutive layer or laminar element has dotted lines made with a die on its surface. In another preferred embodiment, the dotted lines are located in sections and they are parallel to the nearest lateral border of the laminar element. These dotted lines may be shaped like a "C" with their extremes open. Preferably, the constitutive layer or the laminar element may be quadrangular in shape, and even more preferably, square in shape. In a preferred embodiment, the layer or the laminar element is made of cardboard.

[0006] In sum, the present invention represents a significant im-

provement over the prior art in many ways, including allowing quick inspection and change of air grill assembly, economical design, and ease of use. These and other objects and advantages of the present invention will become apparent from the detailed description and claims accompanying the drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0007] Fig. 1 is an upper plan view of the air grill of the present invention.

[0008] Fig. 2 is an upper plan view where in each of the four lateral sections, the inlets or slits of the grill can be seen in the different adaptable configurations.

DETAILED DESCRIPTION

[0009] The present invention solves the problems shown in the prior art in a simple and efficient way, by using a disposable air grill having the following characteristics:

[0010] In a preferred embodiment, the structure of the grill of the present invention includes a constitutive layer or a laminar element, such as a microcorrugated cardboard layer. Other laminar elements made from materials known to one of ordinary skill in the art with similar properties as microcorrugated cardboard layer may also be used, such

as various cardboards or plastics, capable of being molded by a die. The laminar element has dotted lines, which are made with a die or mould to define slits for the outgoing air. The size of the slits may vary according to desirable direction and volume in which air needs to be directed.

[0011] In a preferred embodiment of the present invention, "C"-shaped dotted lines are used. Each of the "C"-shaped may have their extremes ends open. The "C"-shaped slits are located in four sections of the cardboard, and preferably, each of "C"-shaped slits are located in a side of the cardboard layer.

[0012] Preferably, in order to fasten the air grill from the ceiling, wall or filter, the layer or laminar element of the grill is includes an area with a perforation in each corner, wherein a screw or other fixing members may be passed through for fixing the air grill to the ceiling, wall or filter.

[0013] Once the dotted lines are made with a die on the laminar structure, in order to clean, the grill may be opened as wide as necessary. The slits may be opened widely to facilitate easier cleaning and allowing the air from easily going into the precinct.

[0014] In order to conveniently fold each flap, a mark or a line is

used to facilitate such folding. Since preferred materials such as microcorrugated card board are resilient, the natural position of such flaps made from this material includes an initial position, which is completely closed.

[0015] Now referring to the figures, a preferred embodiment of the present invention as shown in Fig.1 depicts a layer or laminar element 1. Preferably the air grill is quadrangular in shape, and more preferably, the air grill is square in shape. The laminar element 1 includes dotted lines 2, which may be made with a die in four sections along the laminar element 1. Preferably, the dotted lines 2 are parallel to the lateral borders of the grill.

[0016] Another preferred aspect of the present invention as shown in fig. 2 depicts variable slits with minimum, intermediate and closed flap positions. When an injection of air inlets into the slits of the grill, the slits may be in their minimum opening position, as shown in section "a." The slits shown in section "b" may be made folded into wider or narrower flap configurations to reflect intermediate, closed or open positions, facilitated by the marks 3. In sections "c" and "d", the flaps are depicted in half and maximum opening position respectively.

[0017] The air grill apparatus and a method of installing and in-

specting an air grill apparatus of the present invention may have other applications aside from use in a heating/cooling air conditioning systems. Additionally, the direction of air flow has been described herein in the preferred orientation but it should be apparent to one of skill in the art that the flow direction could be reversed. Thus, although the invention has been herein shown and described in what is perceived to be the most practical and preferred embodiments, it is to be understood that the invention is not intended to be limited to the specific embodiments set forth above. Rather, it is recognized that modifications may be made by one of skill in the art of the invention without departing from the spirit or intent of the invention and, therefore, the invention is to be taken as including all reasonable equivalents to the subject matter of the appended claims.